

# **LASER IRRADIATION OF AUTOBLOOD AT THE ALLERGIC RHINITIS**

A.B. Kniazev, A.P. Tsolaridis, N.A. Kniazeva, P.A. Tsolaridis  
Saratov State Medical University

Allergic rhinitis (AR) - is one of the most common diseases. Now existent methods of medication of AR not always lead to positive results, that is why the working out of new methods, especially nonpharmacological methods, of treatment of the given disease is rather an actual problem.

Modern therapy of allergic rhinitis includes elimination of allergen, immunotherapy and treatment by medication (A.A. Lantsov and S.V. Ryazantsev, 1997). In our opinion, the exposure on autonomic nervous system to remove the imbalance of sympathetic and parasympathetic nervous system is needed when treating allergic rhinitis. One of such methods of treatment of allergic rhinitis is the method of physical exposure of low intensive laser on neck vascular-nervous neck bundle.

In ORL-clinic of Saratov State Medical university the method of non-invasional laser irradiation of autoblood at the allergic rhinitis is suggested and introduced (Patent X2 2126701 dated 27.02.1999).

The way of treatment of patients with allergic rhinitis consists in the creation of intradermal hemorrhage at the region of bifurcation of common carotid artery in the projection of neck neurovascular bundle. This area is exposed by the laser, the length of the wave of irradiation is 0,81  $\mu\text{m}$ , the density power is 16 mW per cm during the period of 10 min. daily.

Treatment is carried out by semiconductive laser therapeutic apparatus "LATON-100" which is worked out by the firm "Volo". Laser irradiation of the mentioned neck vascular-nervous bundle is made by baromanipulator.

This laser irradiation of autoblood produces multifactorial influence on pathological process and on the man's organism as a whole. First of all, it is necessary to mention the reflex biological exposure of laser, its activating influence on membrane of biomolecules, the normalization of cell and humoral immunity. To our mind, local laserbarotherapy is proved and considered to be reasonable (Yu.A. Lotsmanov, M.N. Koltsov, 1989; Yu.A. Lotsmanov, A.B. Knyazev, 1998), because irradiation of a region of skin with intradermal hemorrhage takes place that leads to possible desensibilization. Exposure of laser beams on blood of neck magistral vessels leads to positive influence on the process of AR indirectly because of the improvement or rheological properties of blood (V.R. Gofman and coauthors 1997).

92 patients with allergic rhinitis were treated. The age of patients' varies from 15 years old to 65, among them we notify the predominance of women (63 %). Duration of the disease varied from 3 to 20 years. Clinical symptoms which are characteristic for AR, correspond to pathological shifts of indexes of functional state of nasal cavity (respiratory, olfactory, transport and excretory functions, pH

of nasal secretion, rhinocytogram, rhinorheography, clearance of hydrogen of nasal cavity). Besides, changes of aggregation capacity of thrombocytes and antiaggregational activity of vascular wall were shown from people who were ill with AR.

All the patients with AR received laserbarotherapy in accordance with the given above technique. Clinical effect just after ending course of treatment was evaluated as “good” by 71 % of patients, as “satisfactory” by 20% of patients, and as “no effect” by 9% of patients. The most successful result was received when treatment of patients with AR started at the initial stage of development of AR. 8 patients did not notice any effect from laserbarotherapy because in their cases the stage of polyposis of AR was diagnosed. To all of them in addition an operation was performed - nose polypotomy and as the result - positive effect was achieved. After performed treatment 91% of patients subjectively noticed sense of amelioration because of the nasal breathing improvement and diminution of rhinorrhea. All the patients noticed normalization of nasal cavity temperature, and also edema of mucous membrane of turbinate bone diminished. The received laboratory data showed true diminution of number of eosinophiles, mastocytes and metaplastic epithelium in smear-traces, all these proves the possible regeneration of mucous membrane of nasal cavity. After given treatment objective indexes of nasal breathing had improved, the number of eosinophiles in peripheric blood truly had lowered. The normalizing influence of the conducting therapy on functional properties of thrombocytes as well antiaggregational activity of vascular wall were noticed. 80 % of patients who had undergone the treatment of laserbarotherapy do not notice relapses of AR in late period (from 1 to 2 years). 20% cases noticed the relapse of AR disease.

Thus laserbarotherapy of allergic rhinitis guarantees immediate positive effect (good and satisfactory results) in 91% of follow-up in the near period. In a late period positive effect was about 80%. Late effect from therapy at the stage of polyposis of allergic rhinitis was not noticed in 20% of cases. Positive effect of laserbarotherapy of allergic rhinitis is conditioned by apparently by improvement of rheological properties of blood and by normalization of the state of autonomic nervous system because of beneficial influence of laser beam on neck vascular nervous bundle of the patient.

Authors: Cholaridi, Alexej Pavlovich  
Knyazev, Anatoly Borisovich  
Knyazeva, Nadezhda Anatoljevna  
Cholaridi, Pavel Alexeevich